

**What Is Claimed Is:**

1. A back-off tool for use in a tubular member disposed inside a wellbore, comprising:
  - a housing; and
  - at least one sonic wave generator mounted within the housing, wherein the at least one sonic wave generator is configured to generate a plurality of sonic waves.
2. The back-off tool of claim 1, wherein the sonic wave generator comprises at least one of a piezoelectric ceramic and a stack of piezoelectric plates.
3. A back-off tool for use in a tubular member disposed inside a wellbore, comprising:
  - a housing; and
  - at least one pressure wave generator mounted within the housing, wherein the at least one pressure wave generator is configured to generate at least one pressure wave having a predetermined frequency.
4. The back-off tool of claim 3, further comprising a controller electrically connected to the pressure wave generator, wherein the controller is configured to vary at least one of an amplitude, frequency and resonance of the at least one pressure wave.
5. An apparatus for loosening a threaded connection joining an upper portion and a lower portion of a tubular member, comprising:
  - a back-off tool having at least one sonic wave generator;
  - a wireline connected to the back-off tool, wherein the wireline is configured to lower the back-off tool through the tubular member; and
  - a power supply for delivering a signal to the at least one sonic wave generator, wherein the at least one sonic wave generator is configured to generate a plurality of sonic waves upon receipt of the signal.
6. The apparatus of claim 5, wherein the at least one sonic wave generator comprises at least one of a piezoelectric ceramic and a stack of piezoelectric plates.

7. The apparatus of claim 5, wherein the sonic waves are configured to loosen the threaded connection.

8. The apparatus of claim 5, wherein the at least one sonic wave generator comprises two or more sonic wave generators positioned at two or more locations on the back-off tool.

9. The apparatus of claim 8, wherein the two or more sonic wave generators are positioned such that a combination of the plurality of sonic waves from the two or more sonic wave generators is substantially greater than the plurality of sonic waves from each one of the two or more sonic wave generators.

10. The apparatus of claim 8, wherein each one of the two or more sonic wave generators is configured to be activated simultaneously or at predefined times.

11. An apparatus for loosening a threaded connection joining an upper portion and a lower portion of a tubular member, comprising:

means for lowering a back-off tool through the tubular member to a position substantially proximate the threaded connection; and

means for generating a plurality of sonic waves.

12. The apparatus of claim 11, wherein the means for generating the plurality of sonic waves comprise at least one of a piezoelectric ceramic and a stack of piezoelectric plates.

13. The apparatus of claim 11, further comprising means for delivering a signal to activate the means for generating the plurality of sonic waves.

14. The apparatus of claim 11, further comprising means for applying a reverse torque to the upper portion of the tubular member.

15. The apparatus of claim 11, further comprising means for setting the tubular member to a neutral weight position at the threaded connection above a sticking condition.

16. A method for loosening a threaded connection on a tubular member, comprising:
  - lowering a back-off tool through the tubular member to a position substantially proximate the threaded connection; and
  - activating the back-off tool to generate a plurality of sonic waves.
17. The method of claim 16, wherein the sonic waves are configured to loosen the threaded connection.
18. The method of claim 16, wherein the back-off tool comprises a sonic wave generator.
19. The method of claim 16, wherein the back-off tool comprises two or more sonic wave generators and activating the back-off tool comprises activating the two or more sonic wave generators simultaneously or at predefined times.
20. The method of claim 18, wherein the sonic wave generator comprises at least one of a piezoelectric ceramic and a stack of piezoelectric plates.
21. The method of claim 16, further comprising applying a reverse torque to the tubular member.
22. The method of claim 16, further comprising setting the tubular member to a neutral weight position at the threaded connection above a sticking condition.
23. The method of claim 16, wherein the back-off tool is activated while moving a neutral weight position up and down the tubular member.
24. The method of claim 23, wherein moving the neutral weight position up and down the tubular member comprises reciprocating the tubular member.
25. The method of claim 16, wherein activating the back-off tool comprises activating the back-off tool while moving the back-off tool up and down the tubular member.

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26. A method for backing-off an upper portion of a tubular member joined to a lower portion of the tubular member by a threaded connection in a wellbore, comprising:

applying a reverse torque to the upper portion of the tubular member;

lowering a back-off tool through the tubular member to a position substantially proximate the threaded connection joining; and

generating a plurality of sonic waves through the back-off tool to loosen the threaded connection.

27. The method of claim 26, wherein the sonic waves are generated by at least one of a piezoelectric ceramic and a stack of piezoelectric plates.

28. The method of claim 26, further comprising activating the back-off tool to generate the sonic waves.

29. The method of claim 26, further comprising setting the tubular member to a neutral weight position at the threaded connection above a sticking condition.

30. The method of claim 26, wherein generating the plurality of sonic waves comprises generating the plurality of sonic waves while moving a neutral weight position along the tubular member.

31. The method of claim 26, wherein generating the plurality of sonic waves comprises generating the plurality of sonic waves while moving the back-off tool up and down the tubular member.

32. The method of claim 26, further comprising varying one or more frequencies of the sonic waves.

33. The method of claim 26, further comprising retrieving the upper portion from the wellbore.

34. The method of claim 26, further comprising retrieving the back-off tool and generating the plurality of sonic waves.